

Vedere Artificiala - Tema 3

Detectare faciala folosind metoda glisarii ferestrei si histograme de gradienti orientati

Descrierea abordarii mele - Am extras feature-uri din imaginile pozitive si din cele negative si am antrenat un clasificator (SVM). Dupa ce am terminal de implementat cele 3 functii ramase, am testat clasificatorul, schimband mai multi parametri. Rezultatele obtinute de mine pot fi vazute in acest tabel:

Nr crt	Dim_hog_cell	Threshold	Scales	Flip	Average Precision
1	6	2.5	Single	Nu	15.4
2	6	1.3	Single	Nu	20.1
3	6	1.3	10 scales	Nu	60.6
4	6	1.3	10 scales	Da	60.9
5	4	1.3	10 scales	Da	73.5
6	3	1.3	10 scales	Da	71.3
7	4	0.5	10 scales	Nu	71.4
8	4	0.5	10 scales	Da	73.6
9	4	0.3	10 scales	Da	73.7
10	4	0	10 scales	Da	73.8
11	4	0	20 scales	Da	76.5
12	4	0	40 scales	Da	78.9
13	4	0	60 scales	Da	80
14	4	0	100 scales	Da	80.9
15	4	0	200 scales	Da	81.3

In plus, am implementat si algoritmul de hard negative mining, insa l-am testa doar cu un threshold destul de mare (1.3), rezultatul fiind o precizie destul de mica (aprox 40%). Am incercat sa rulez cu o precizie negativa, (-5), insa dupa un timp destul de indelungat (>4 ore) a dat kill procesului. Am rulat de minim 6 ori, insa de fiecare data s-a intamplat asta (cred ca ramanea fara RAM).

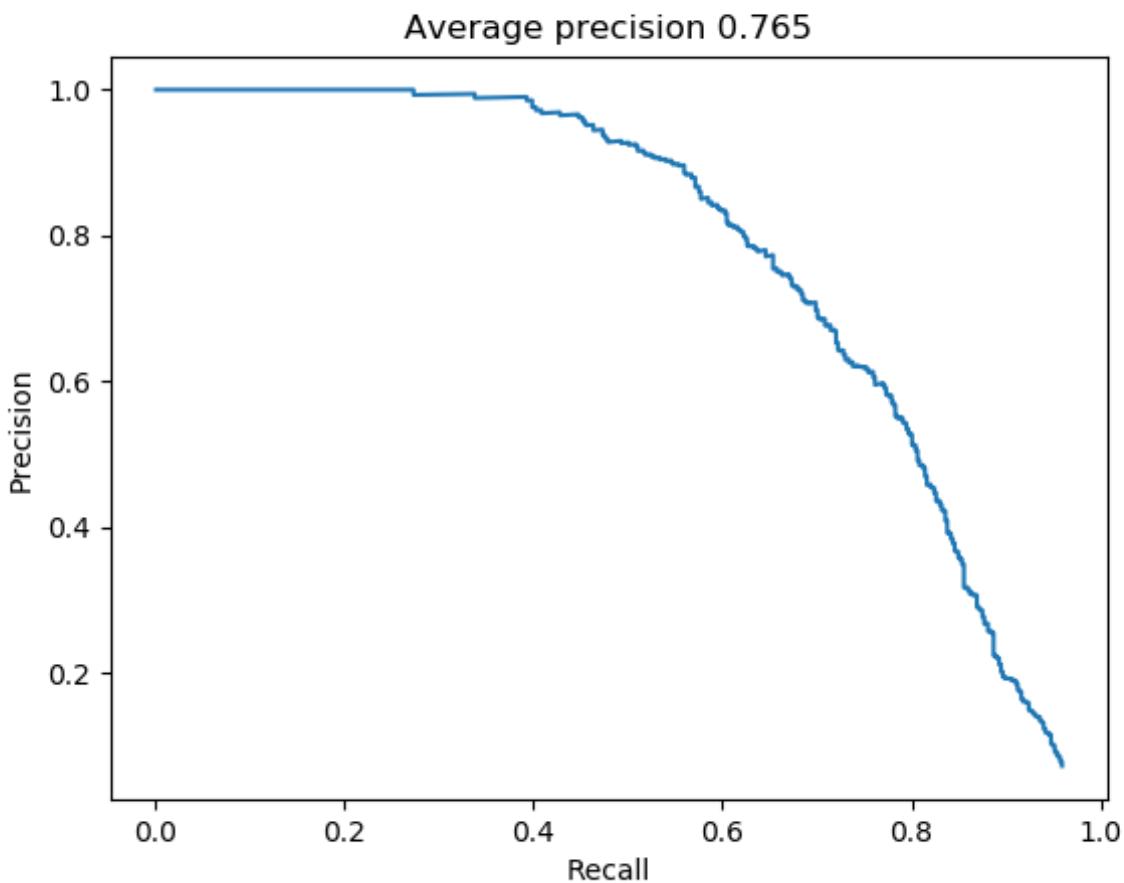
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PROBLEMS 0/130 TERMINAL DEBUG CONSOLE 2. Python
Timpul de procesarea al imaginii de testare 110/130 este 0.095176 sec.
Procesam imaginea de testare 111/130..
Timpul de procesarea al imaginii de testare 111/130 este 1.900423 sec.
Procesam imaginea de testare 112/130..
Timpul de procesarea al imaginii de testare 112/130 este 5.310766 sec.
Procesam imaginea de testare 113/130..
Timpul de procesarea al imaginii de testare 113/130 este 3.361795 sec.
Procesam imaginea de testare 114/130..
Timpul de procesarea al imaginii de testare 114/130 este 3.364850 sec.
Procesam imaginea de testare 115/130..
Timpul de procesarea al imaginii de testare 115/130 este 31.980835 sec.
Procesam imaginea de testare 116/130..
Timpul de procesarea al imaginii de testare 116/130 este 28.326809 sec.
Procesam imaginea de testare 117/130..
zsh: killed    /Users/corinacondurachi/opt/anaconda3/bin/python
(base) corinacondurachi@Corinas-MacBook-Air-2 cod %
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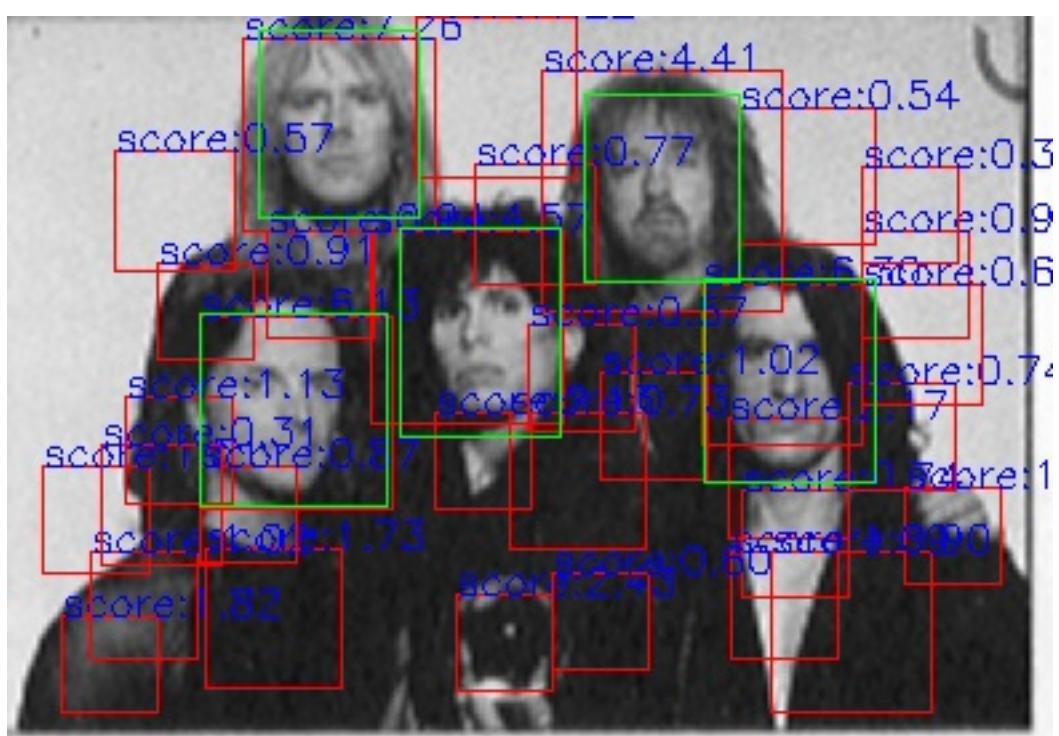
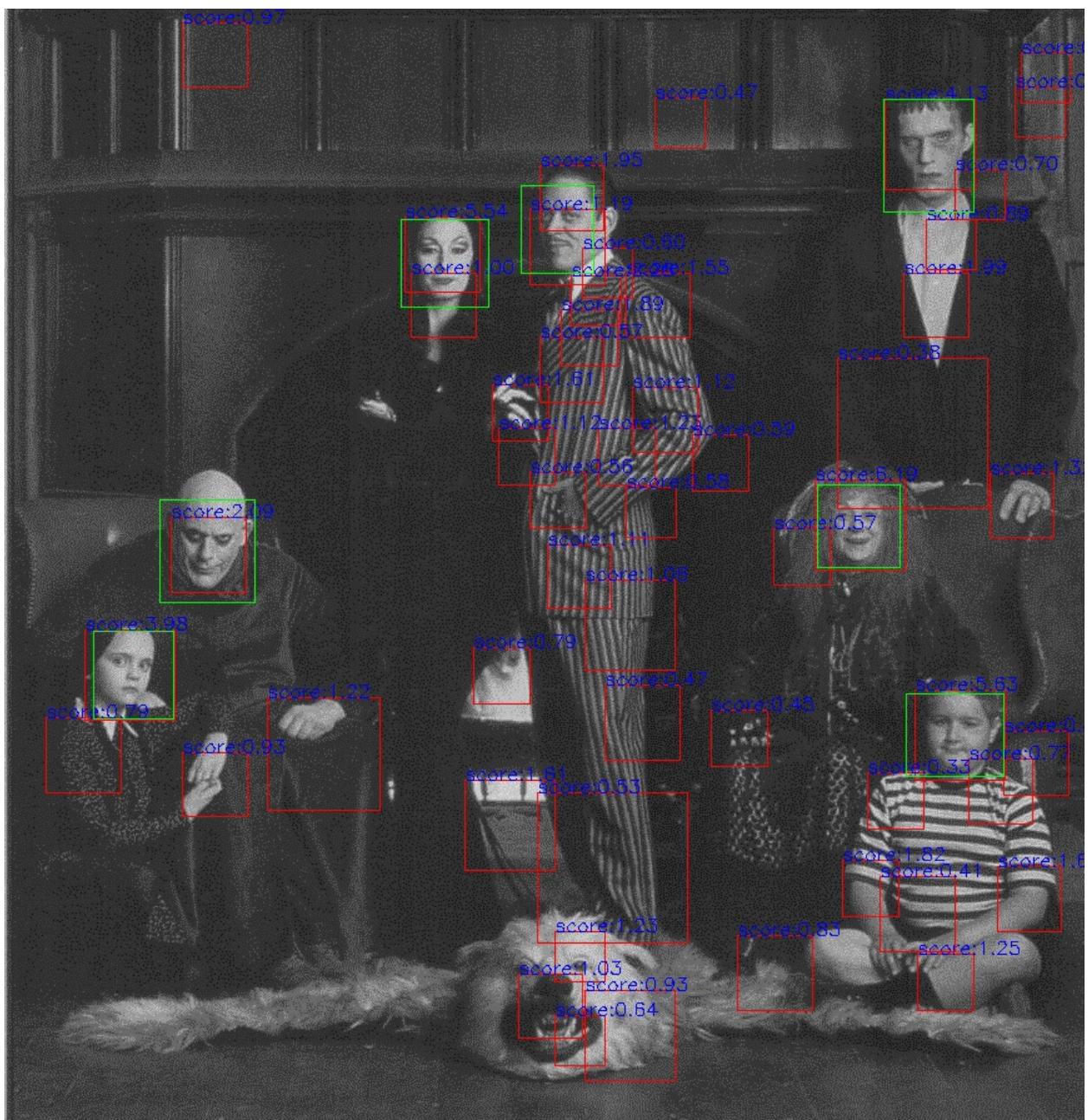
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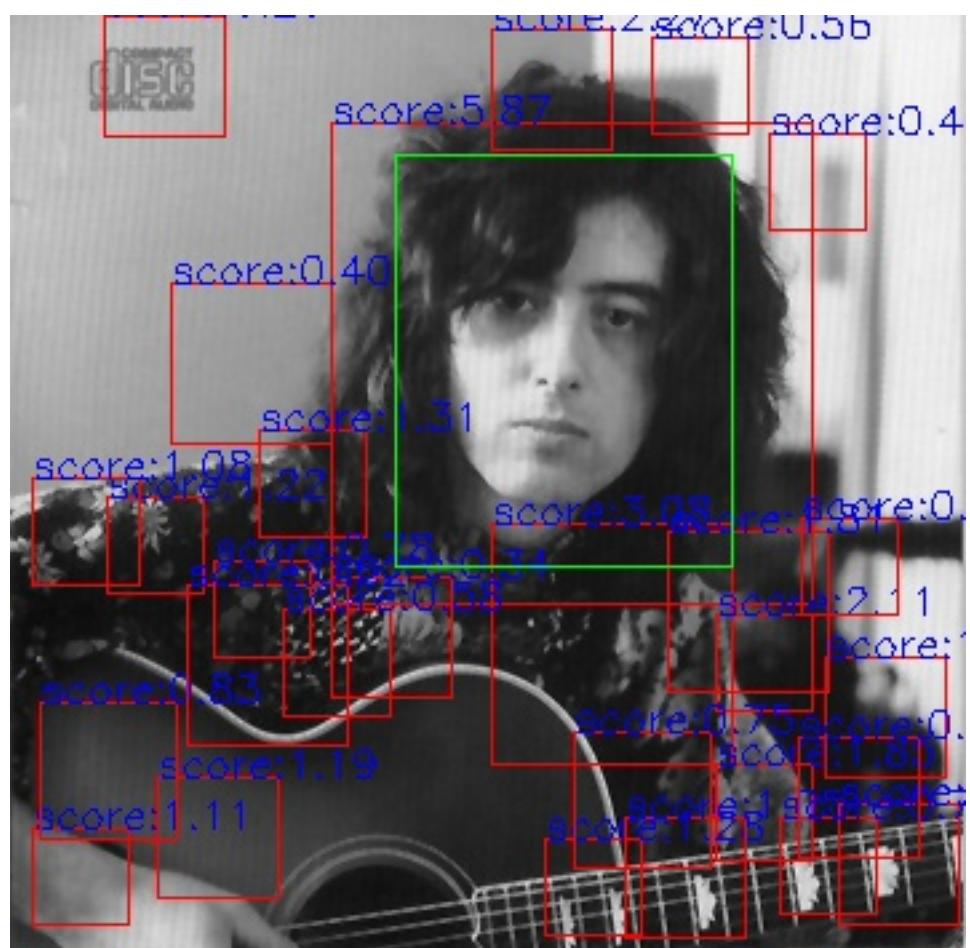
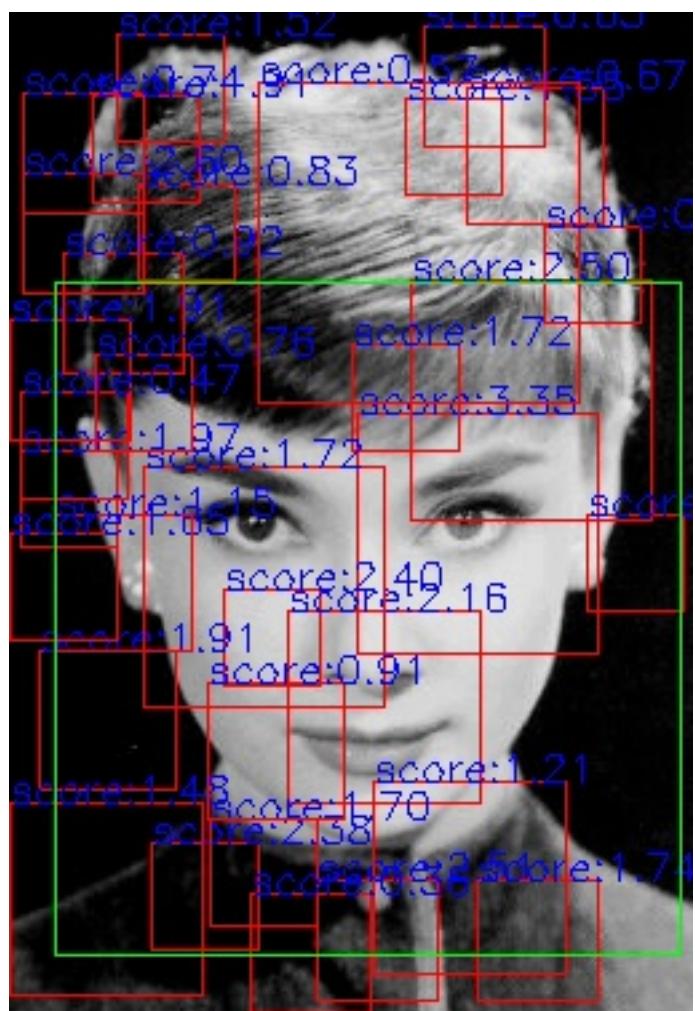
Rezultate obtinute:

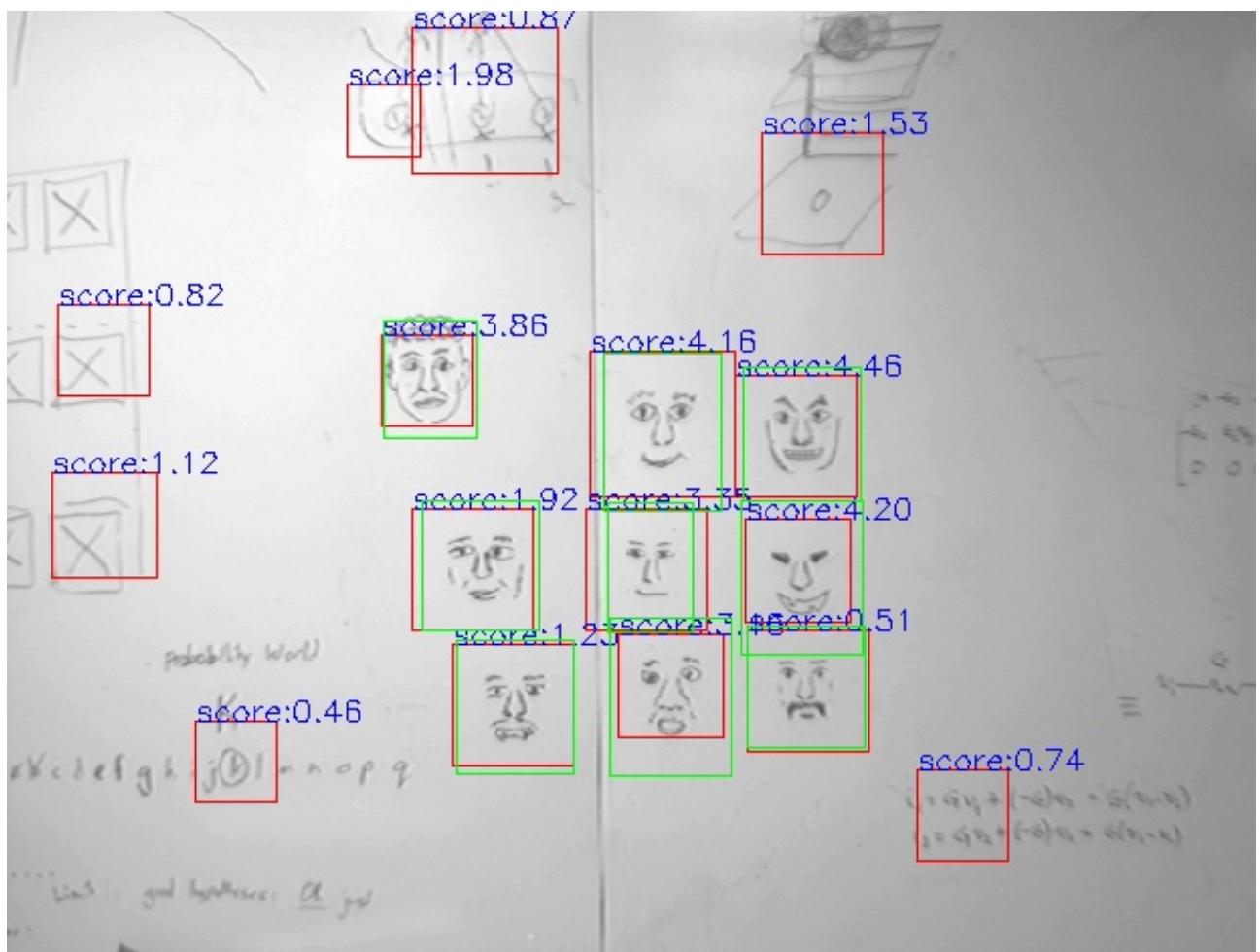
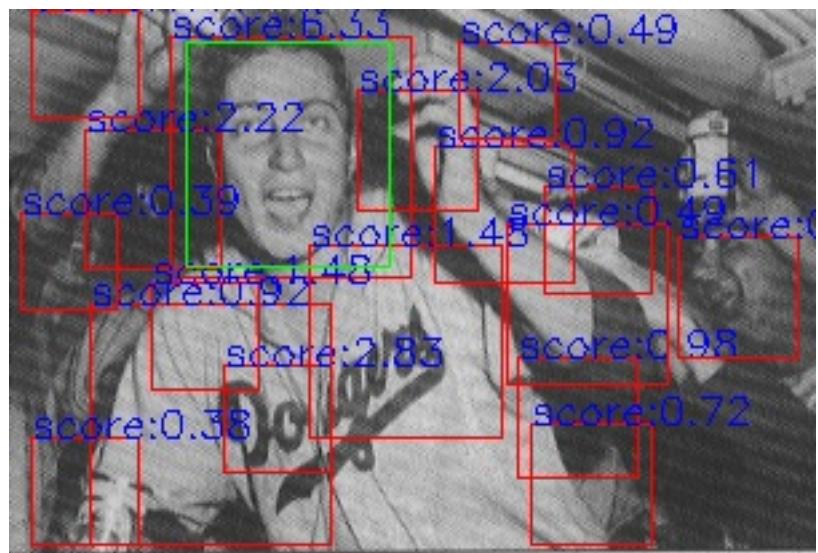
1. **Dim_hog_window = 4, Scales = 20, Threshold = 0**

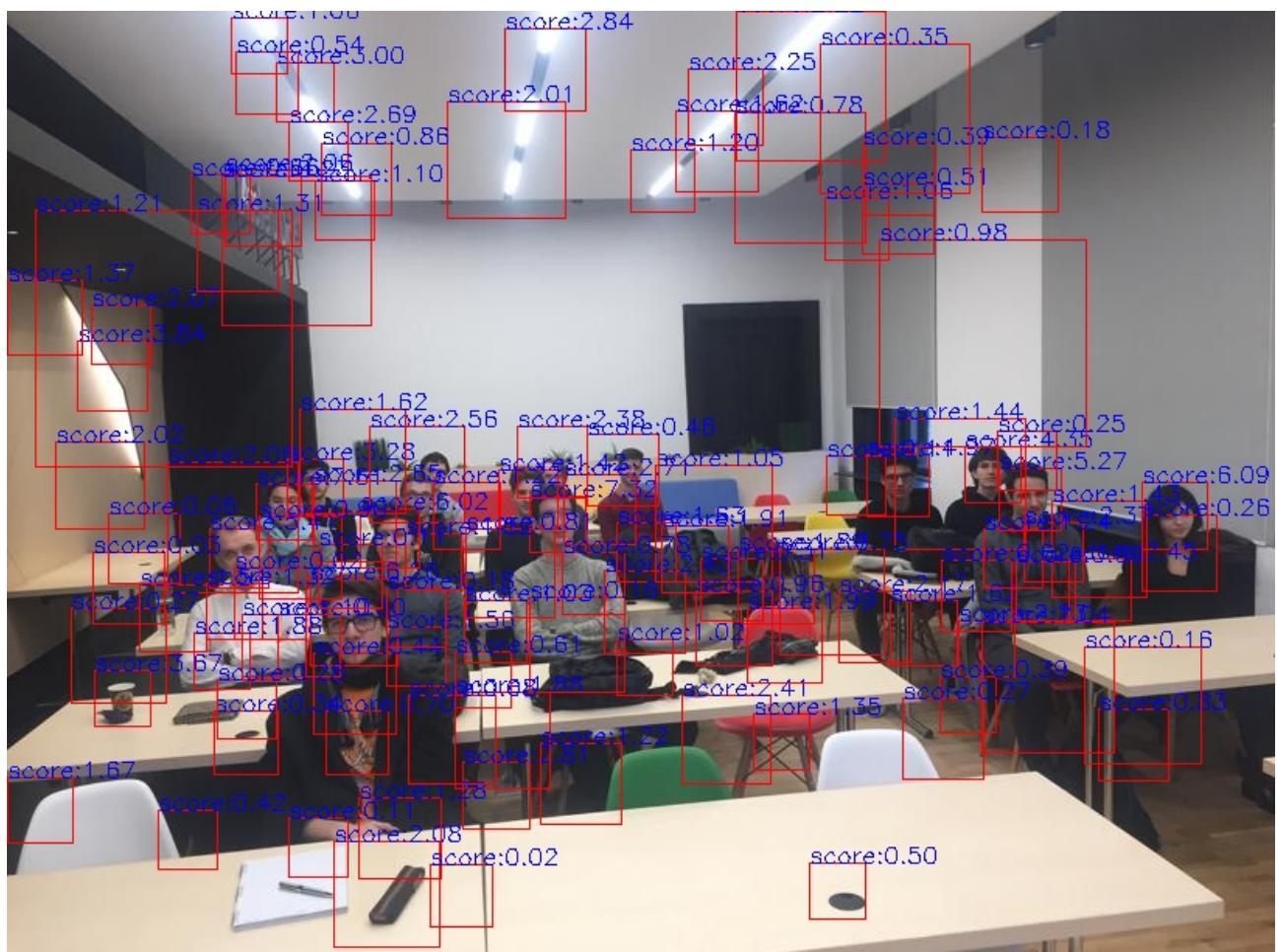
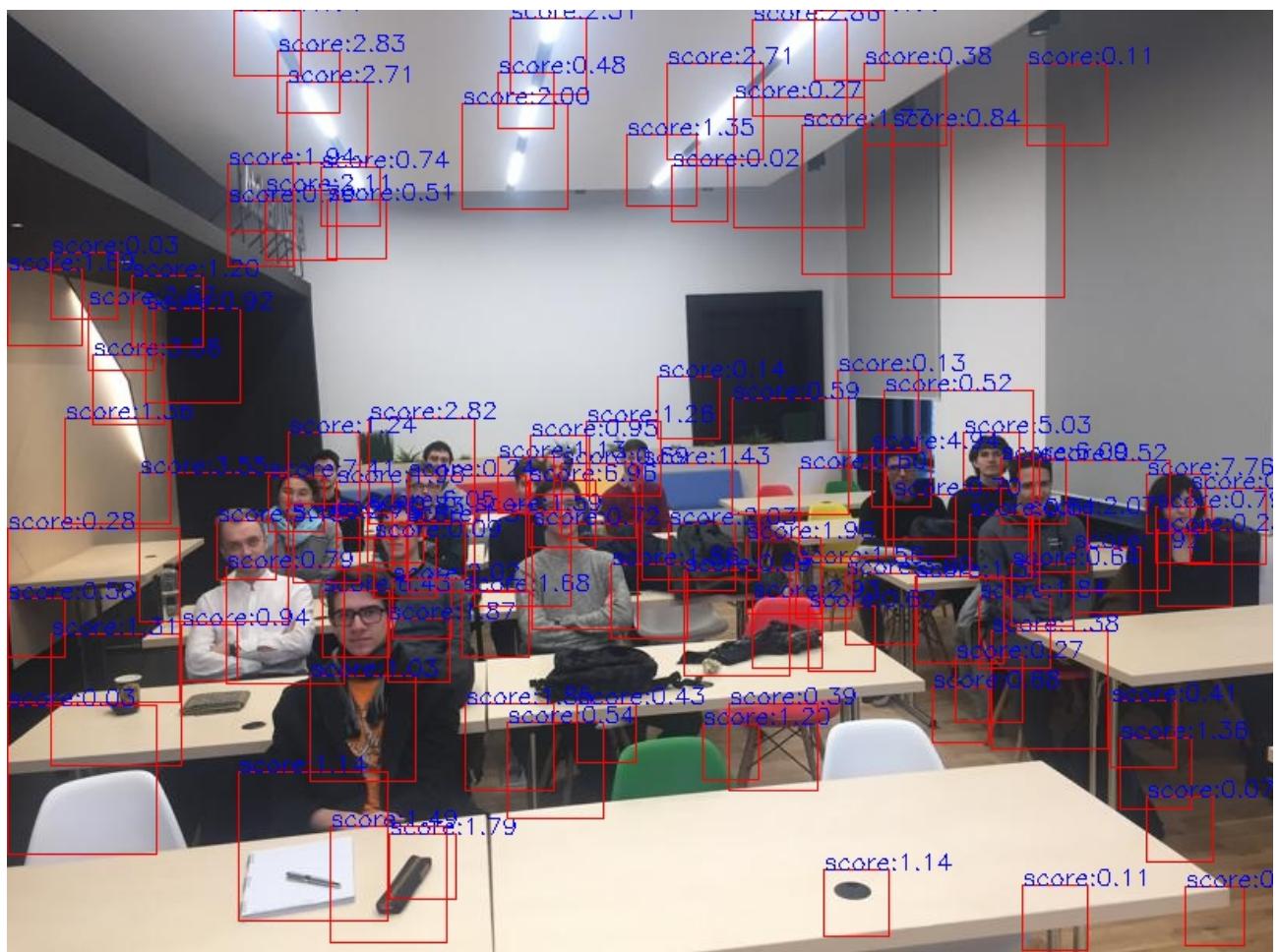


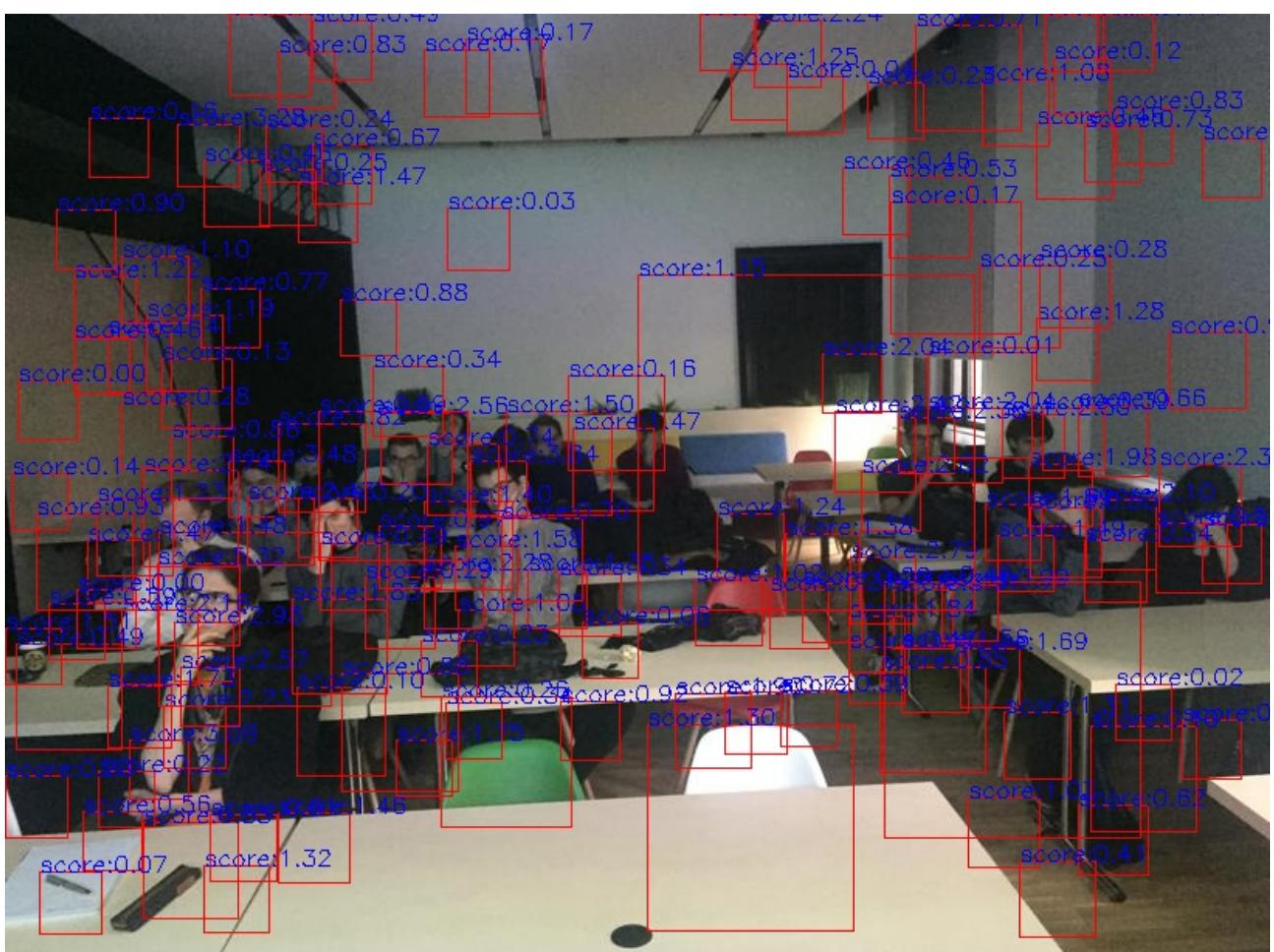
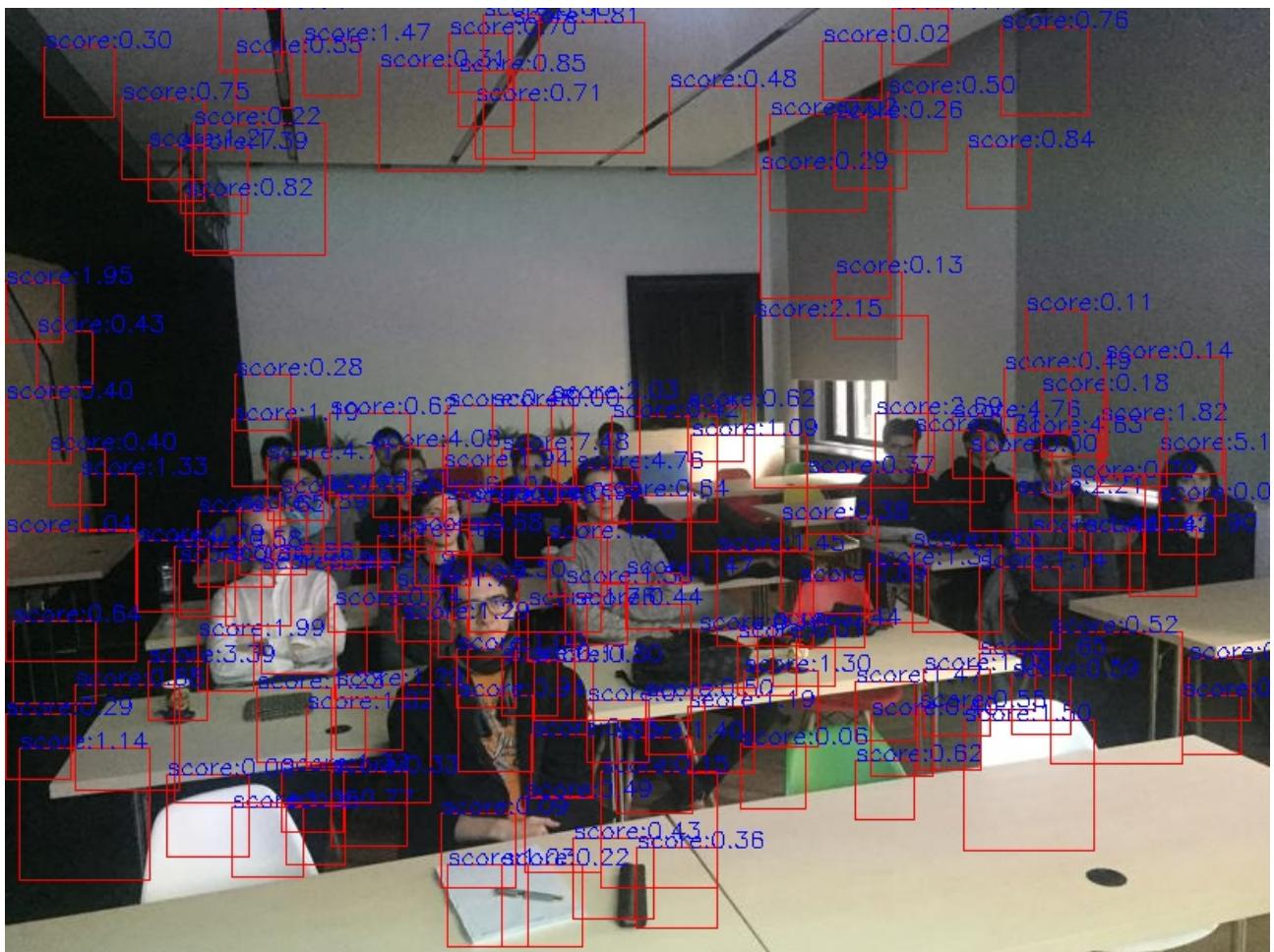




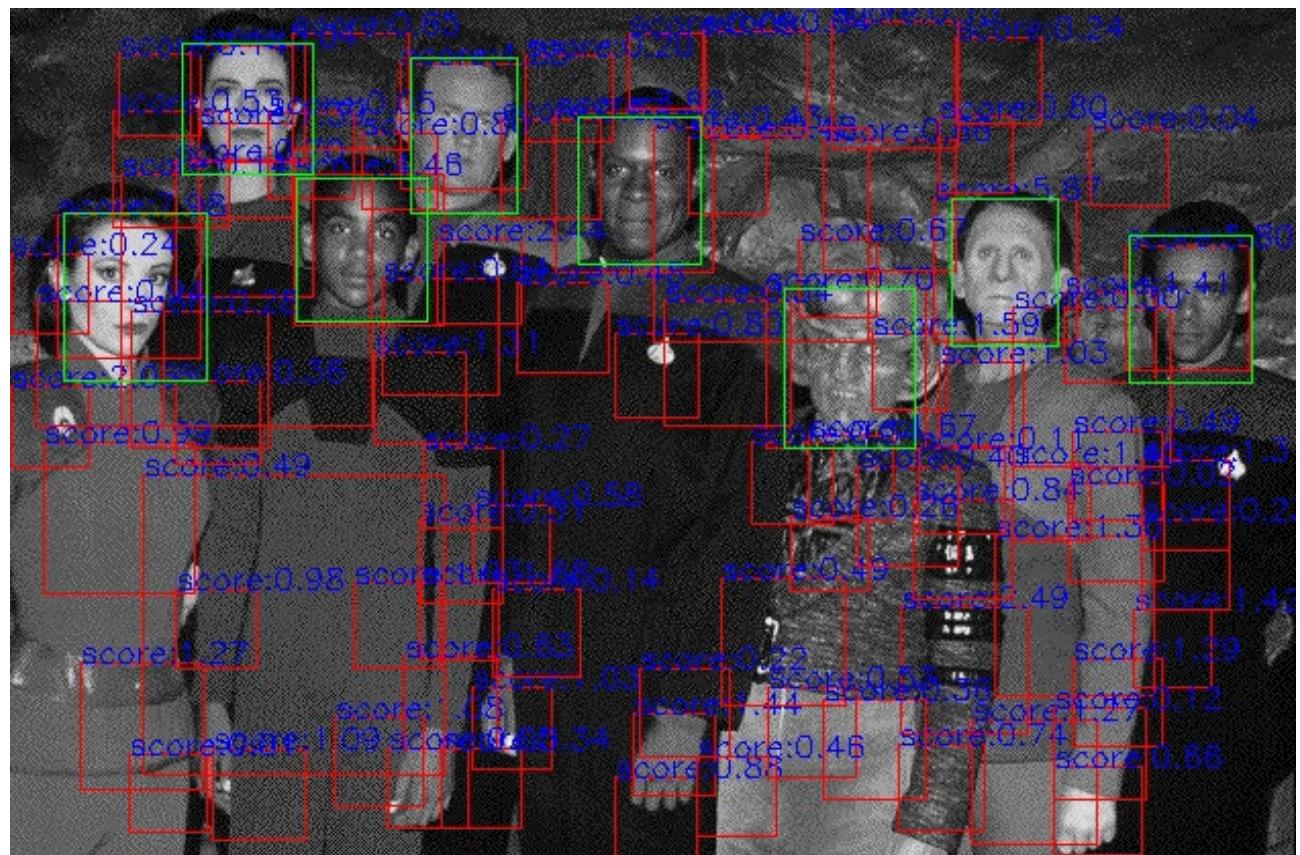
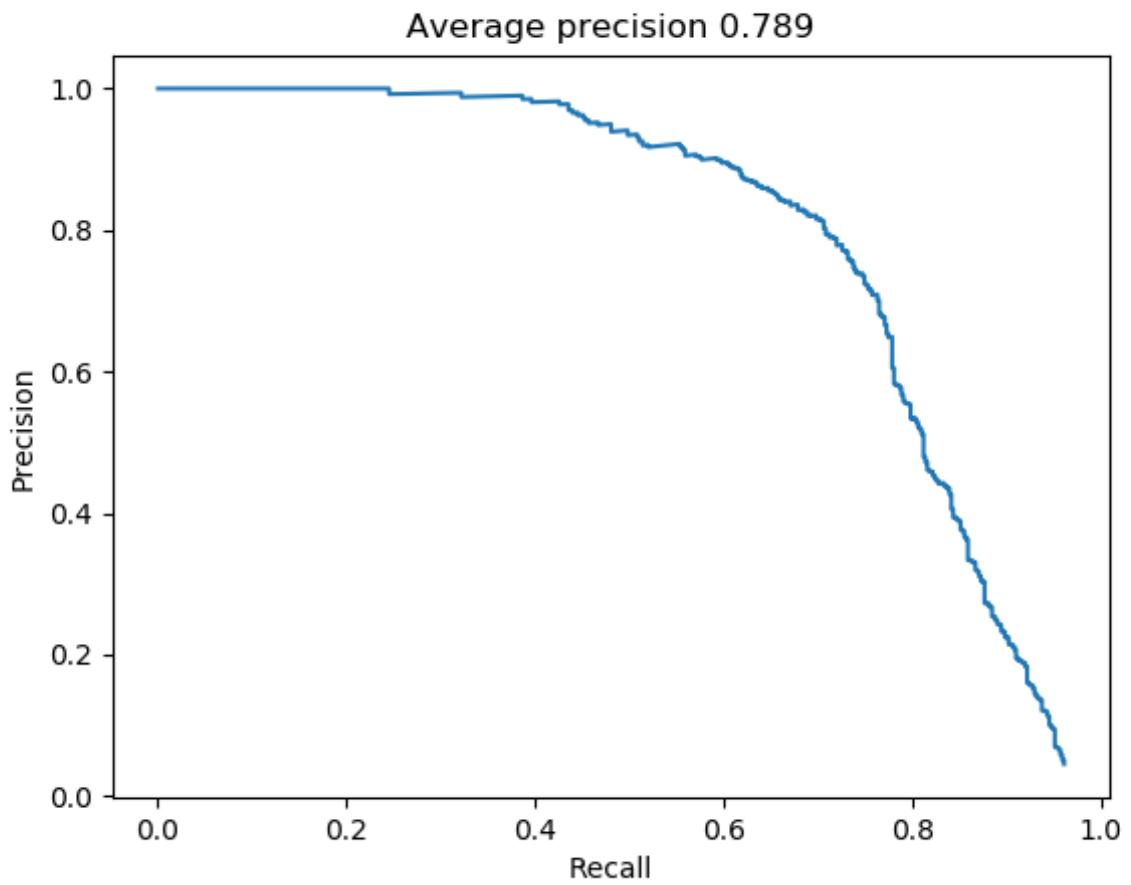


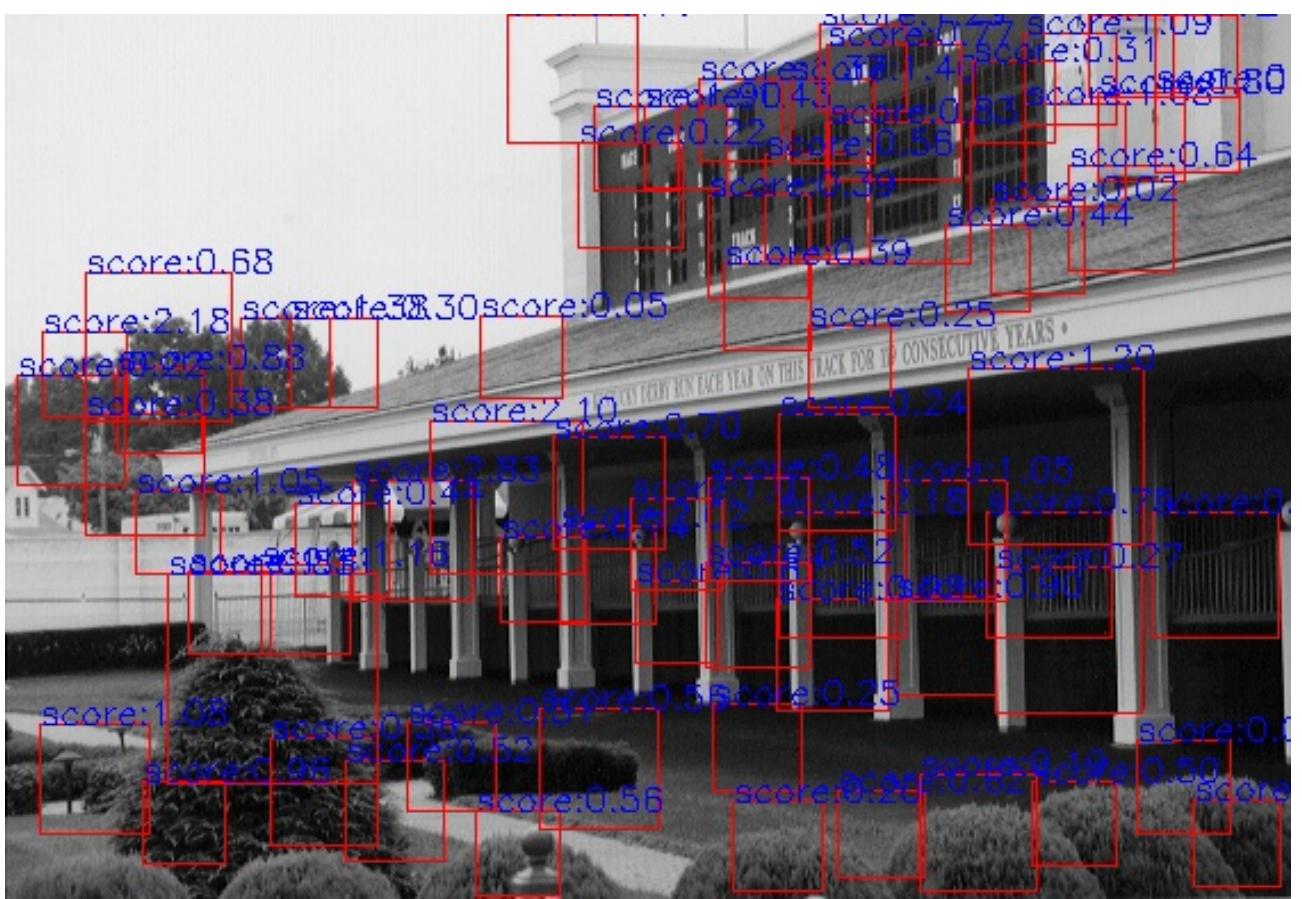
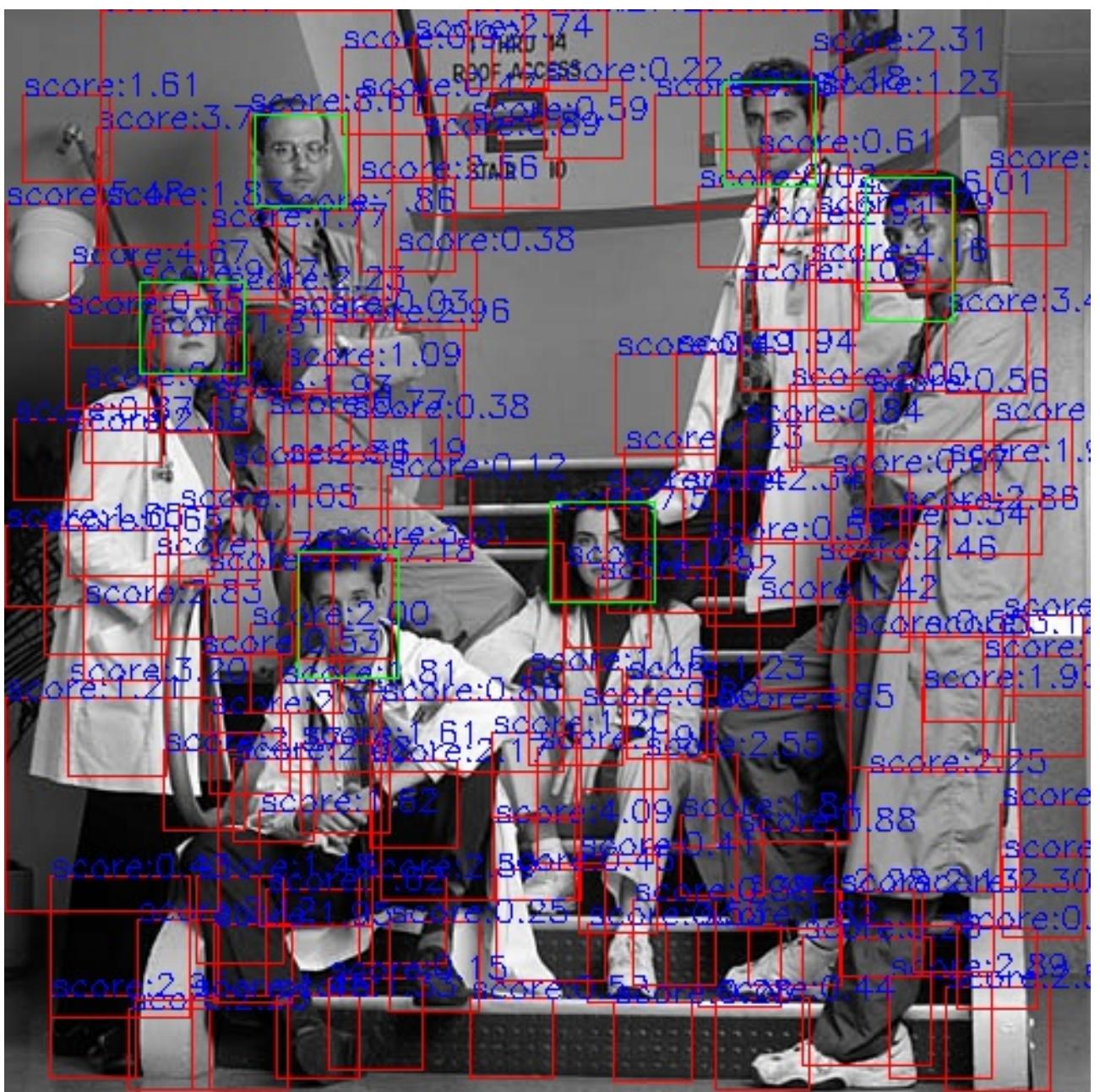


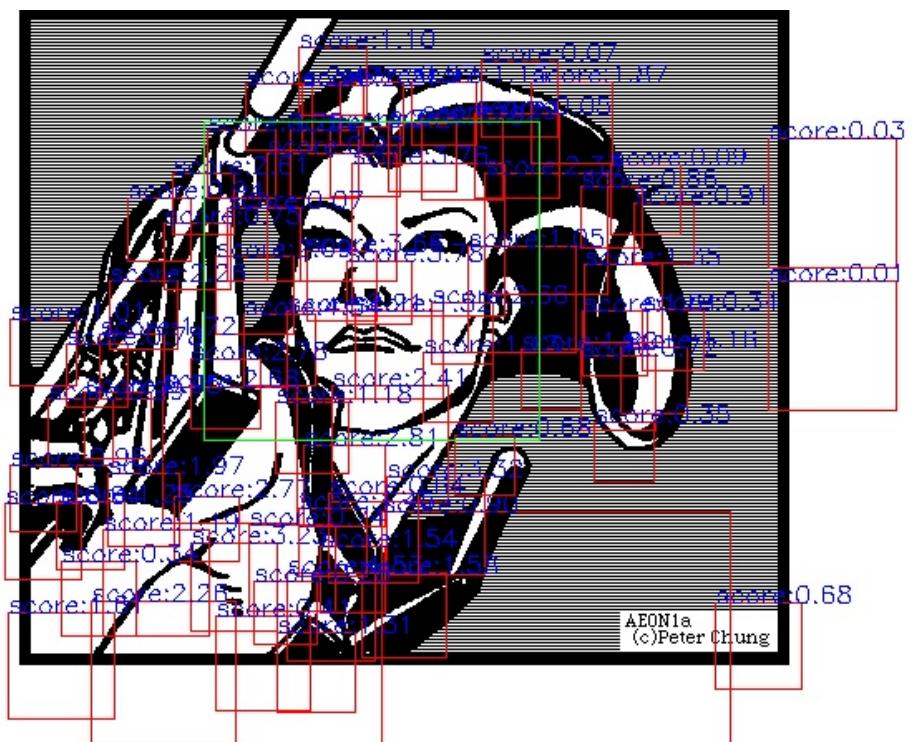




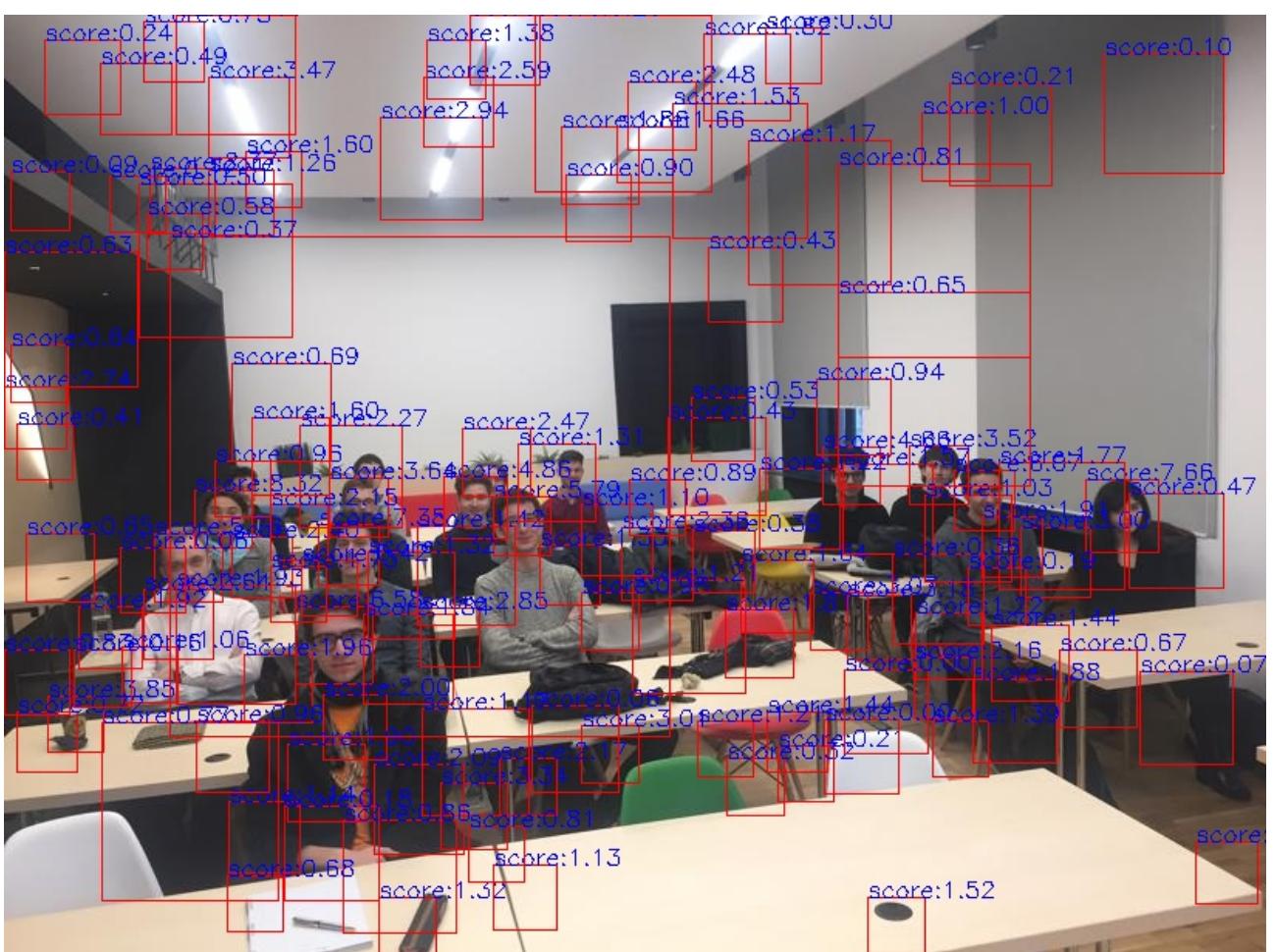
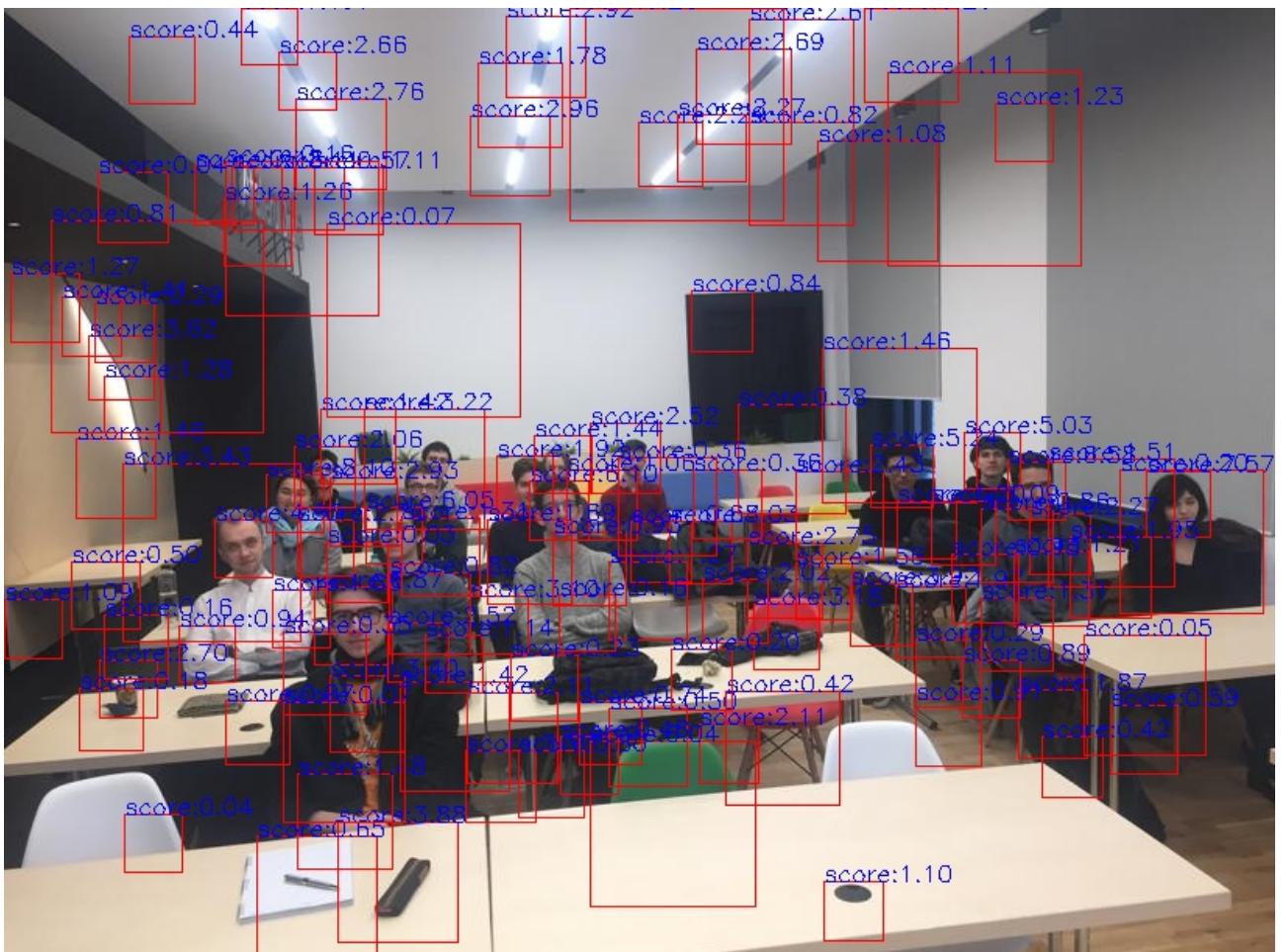
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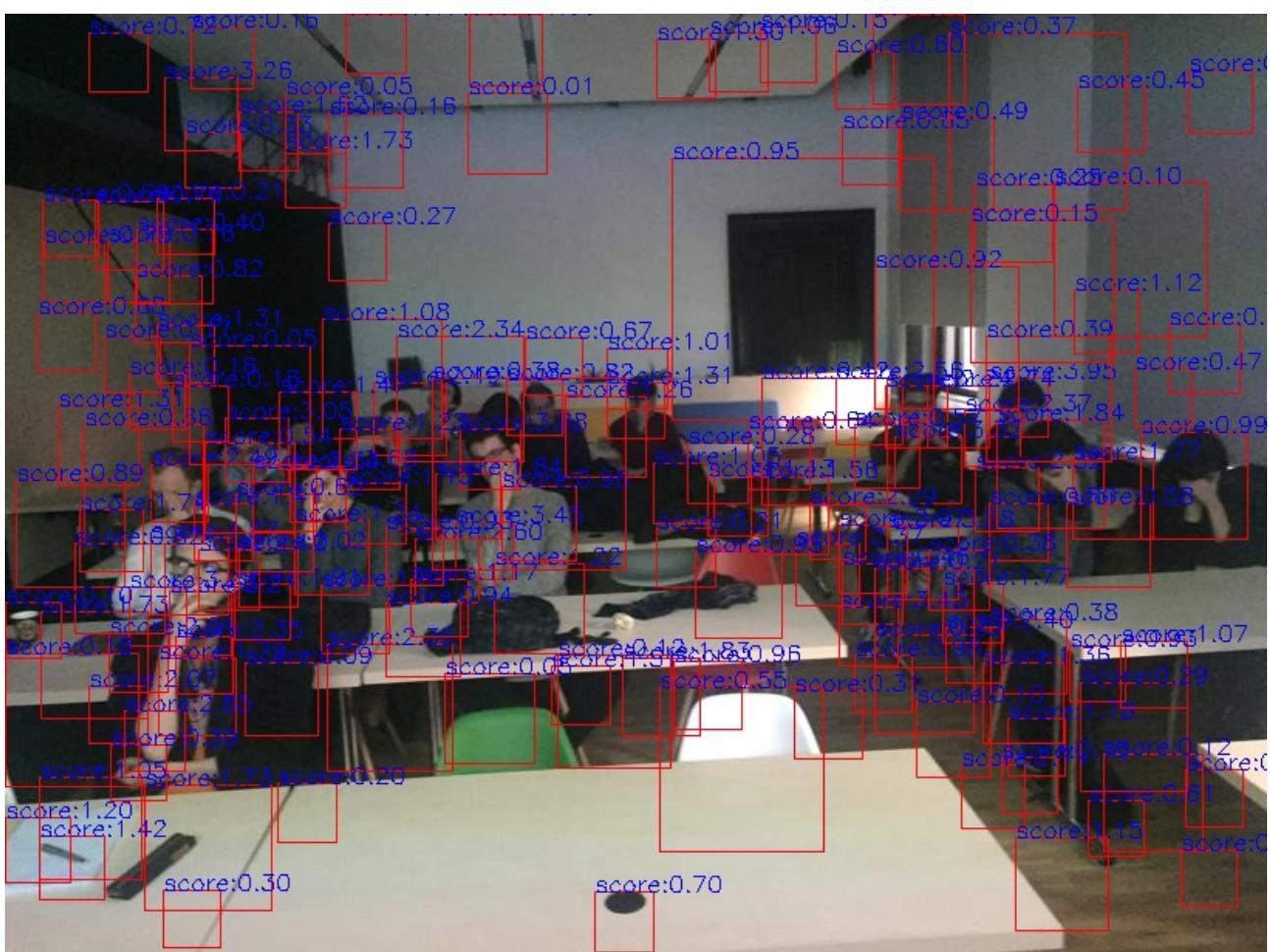




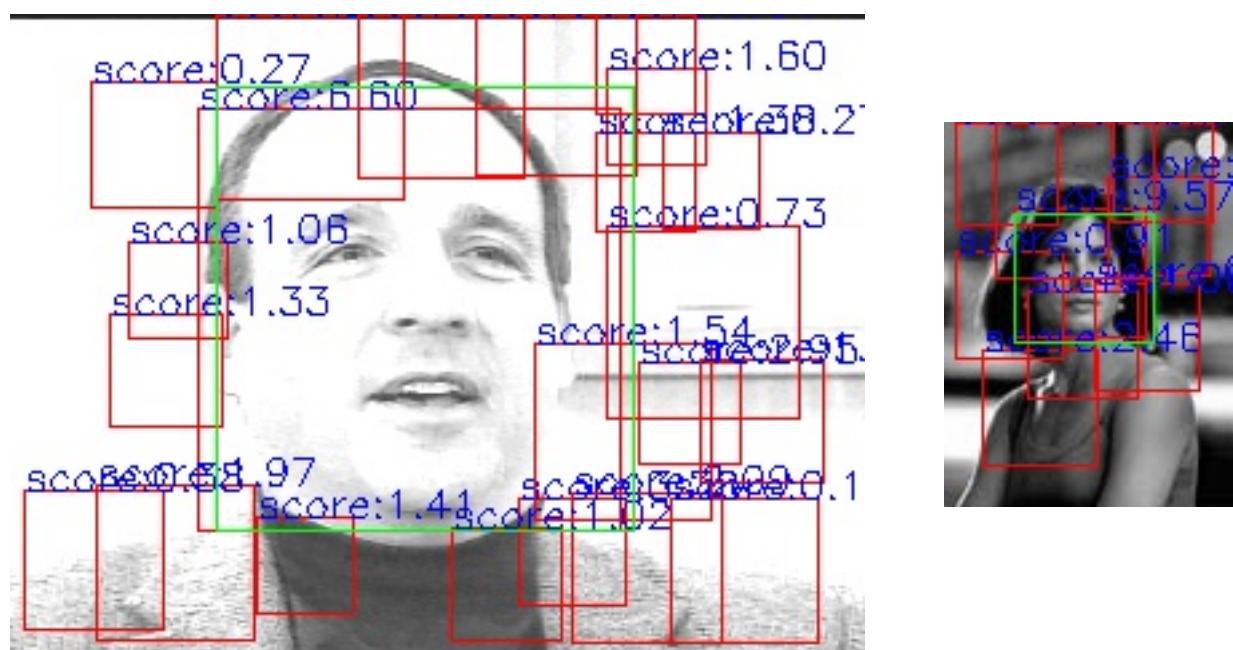
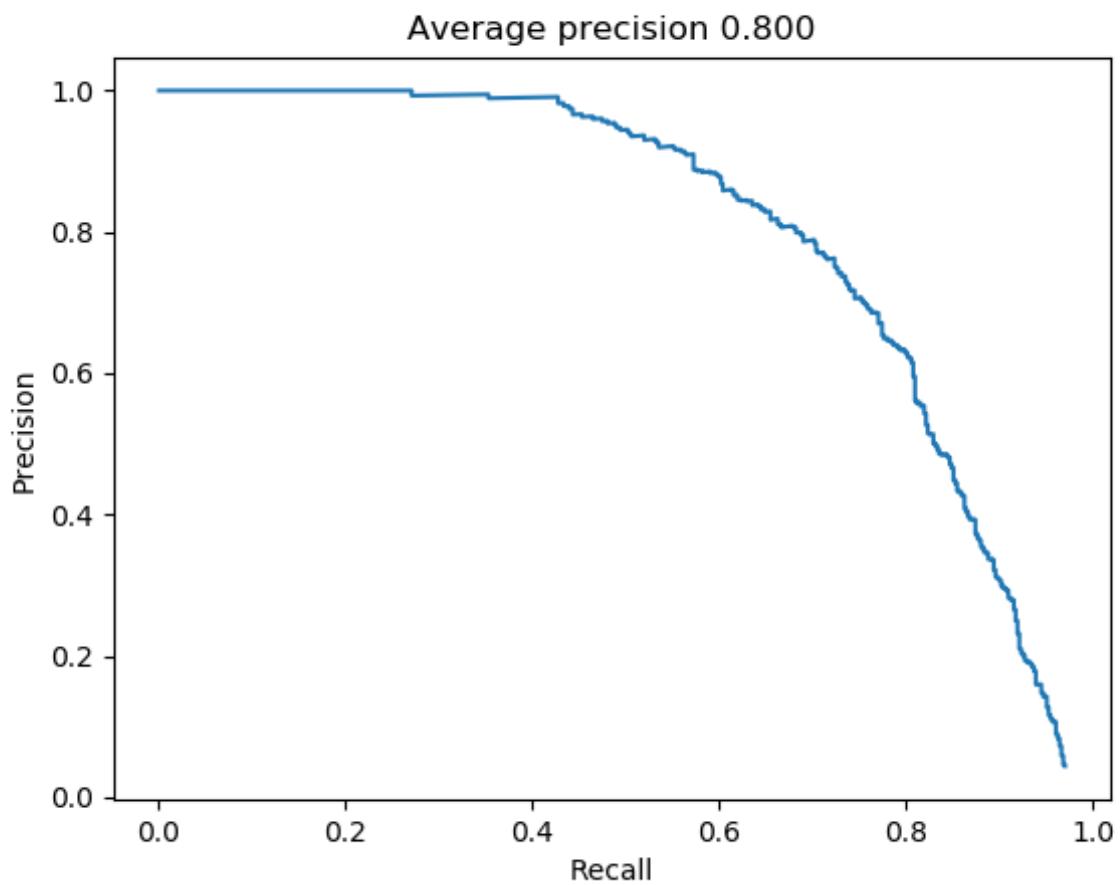


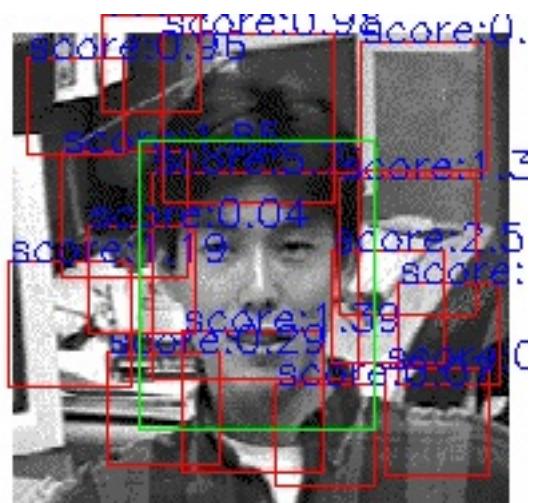


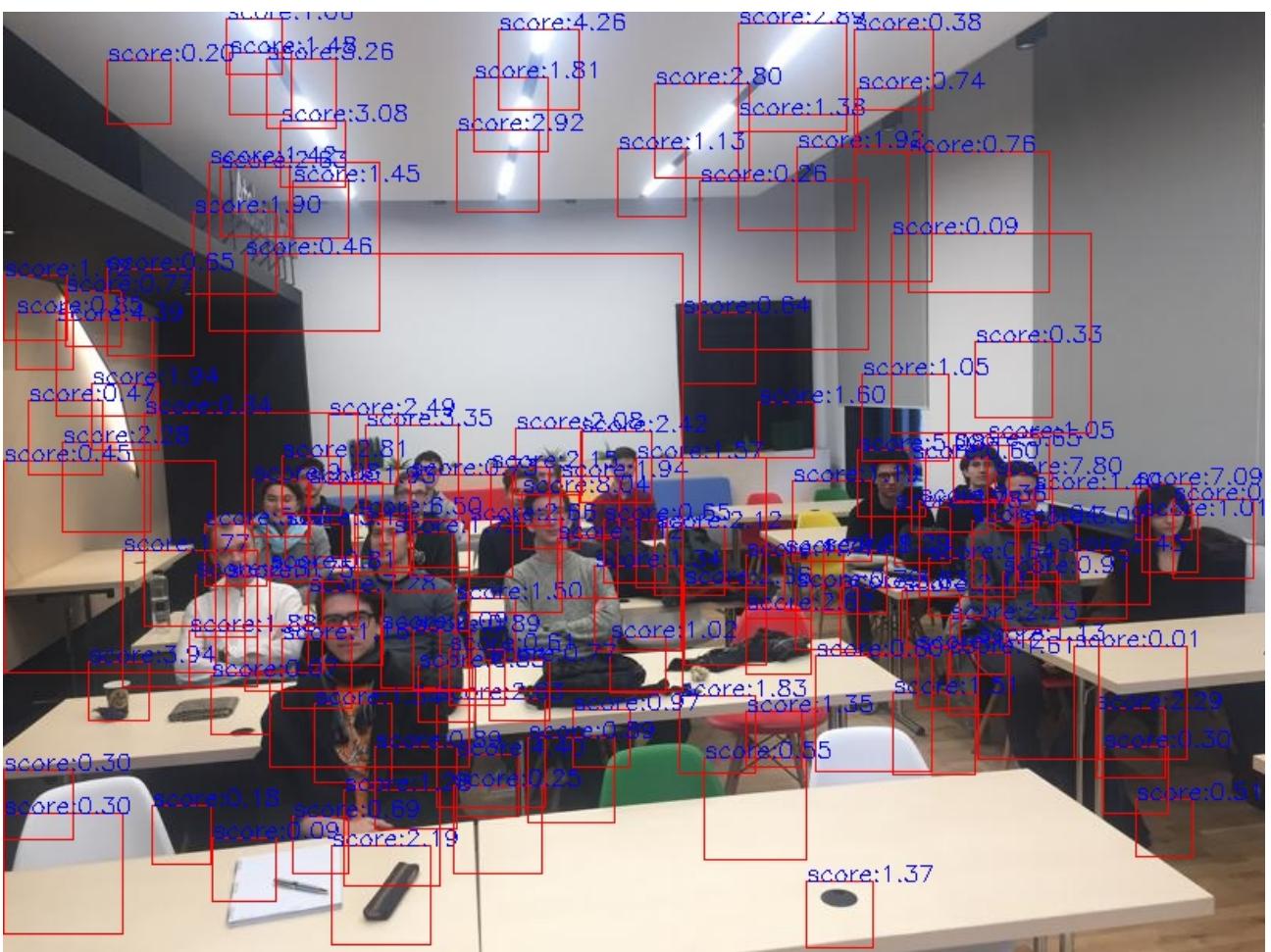
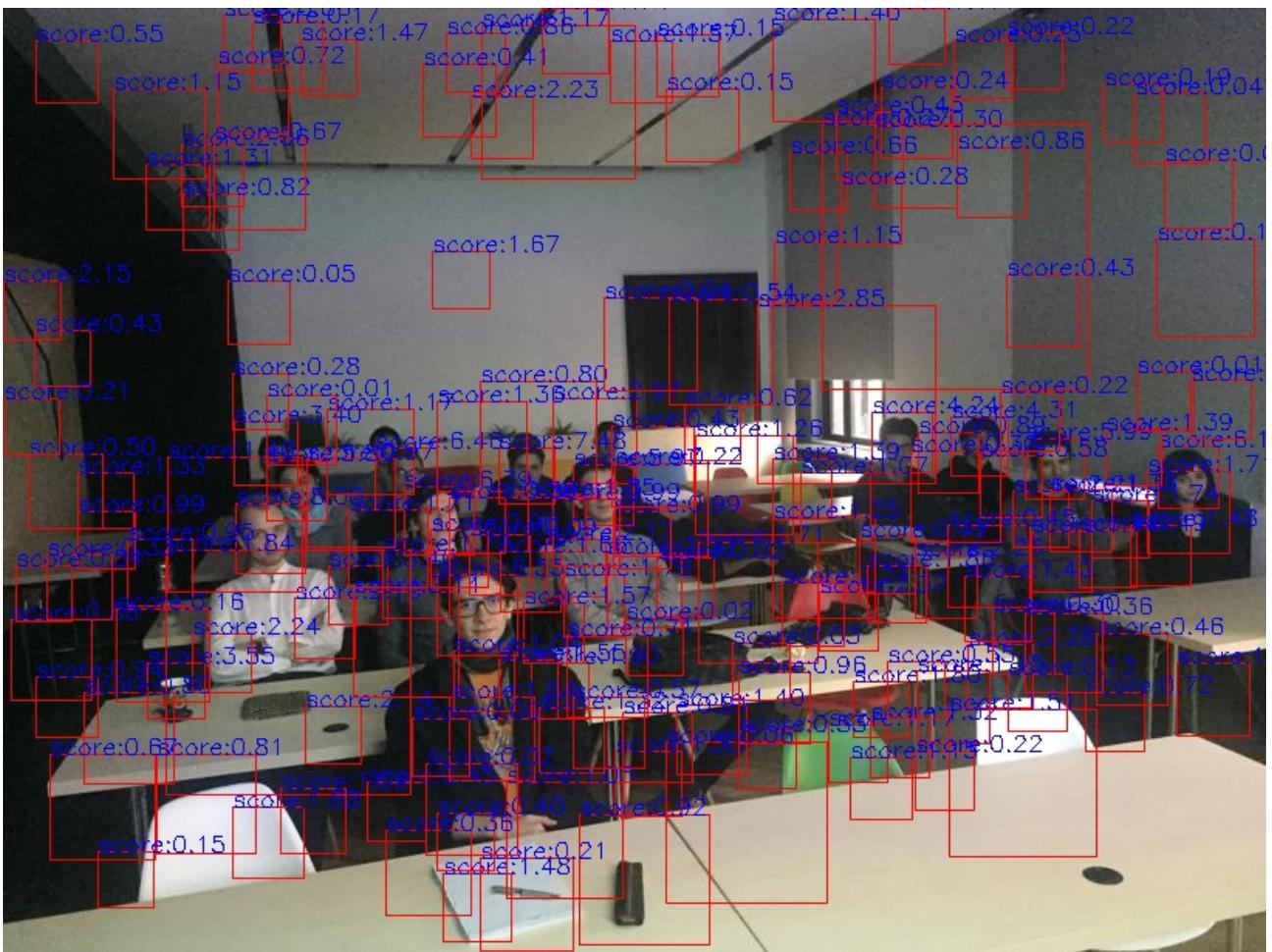


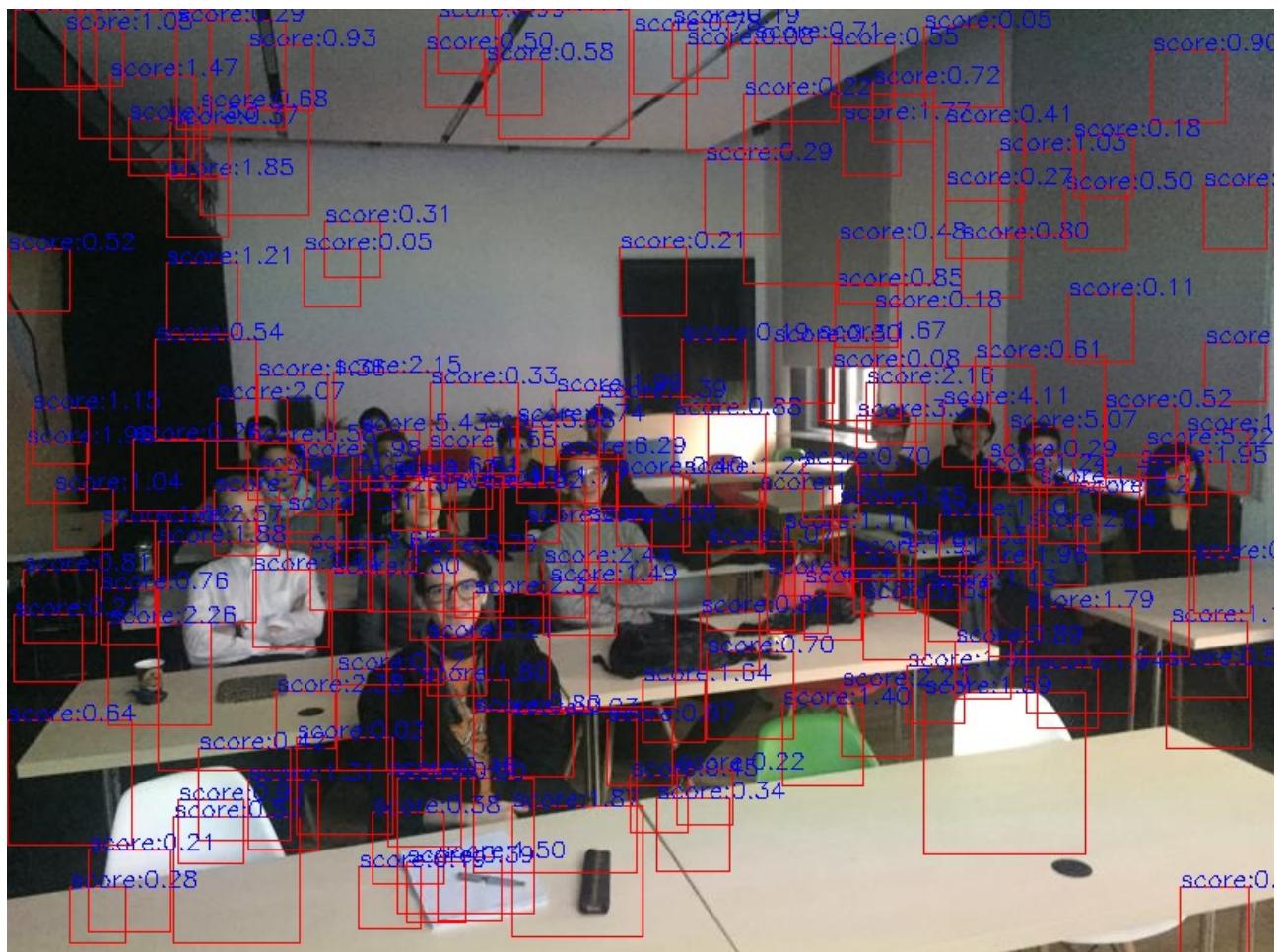


3. Dim_hog_window = 4, Scales = 60, Threshold = 0

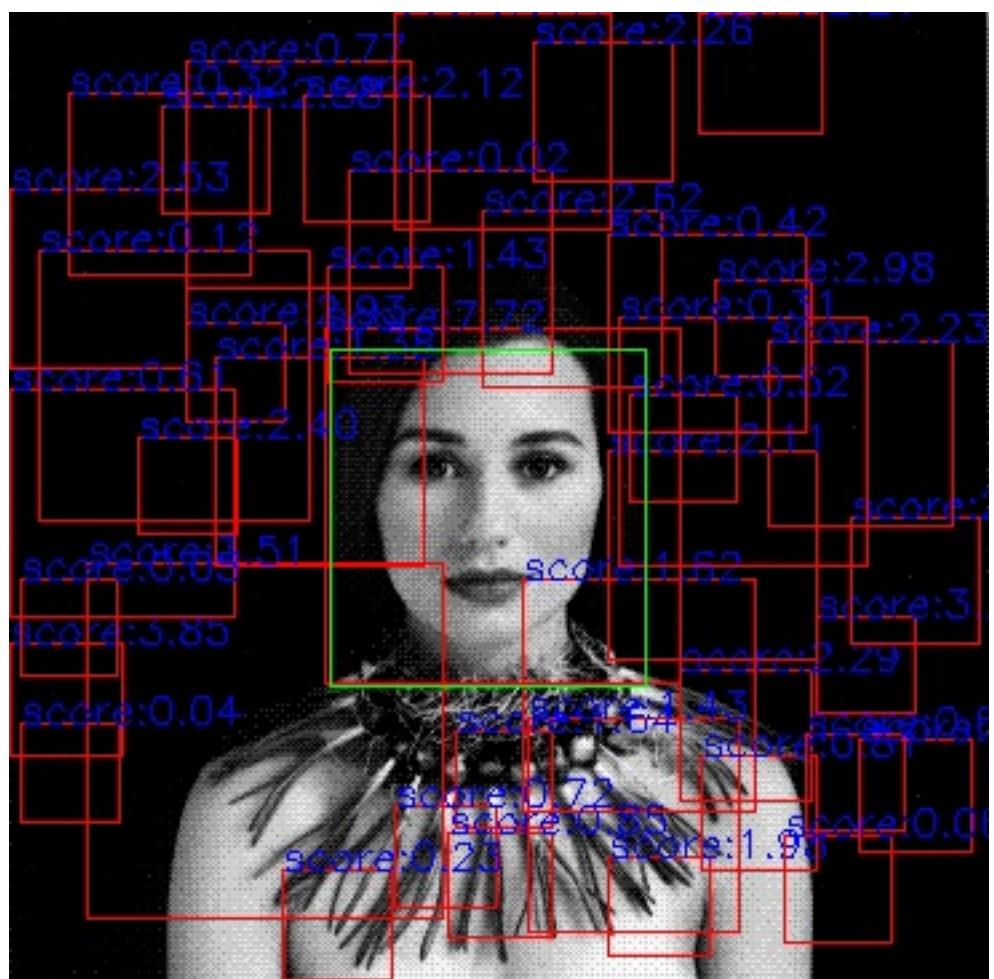
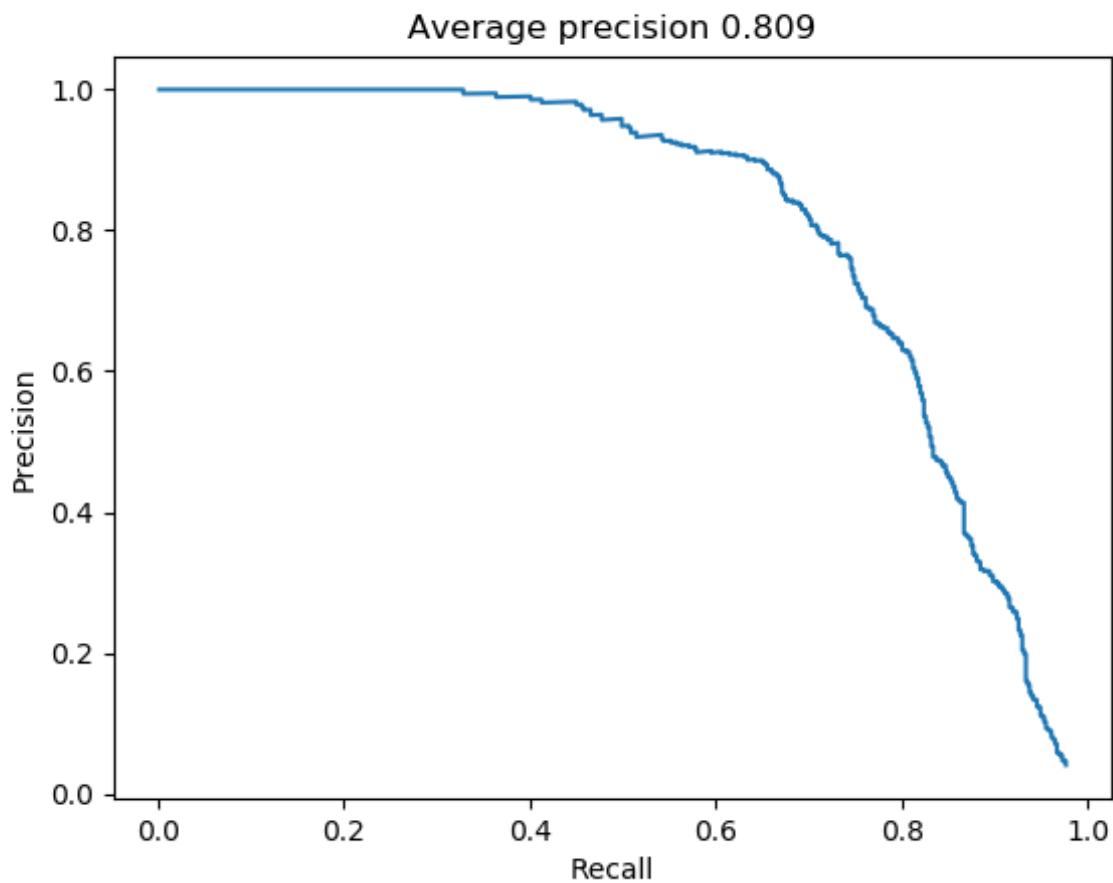


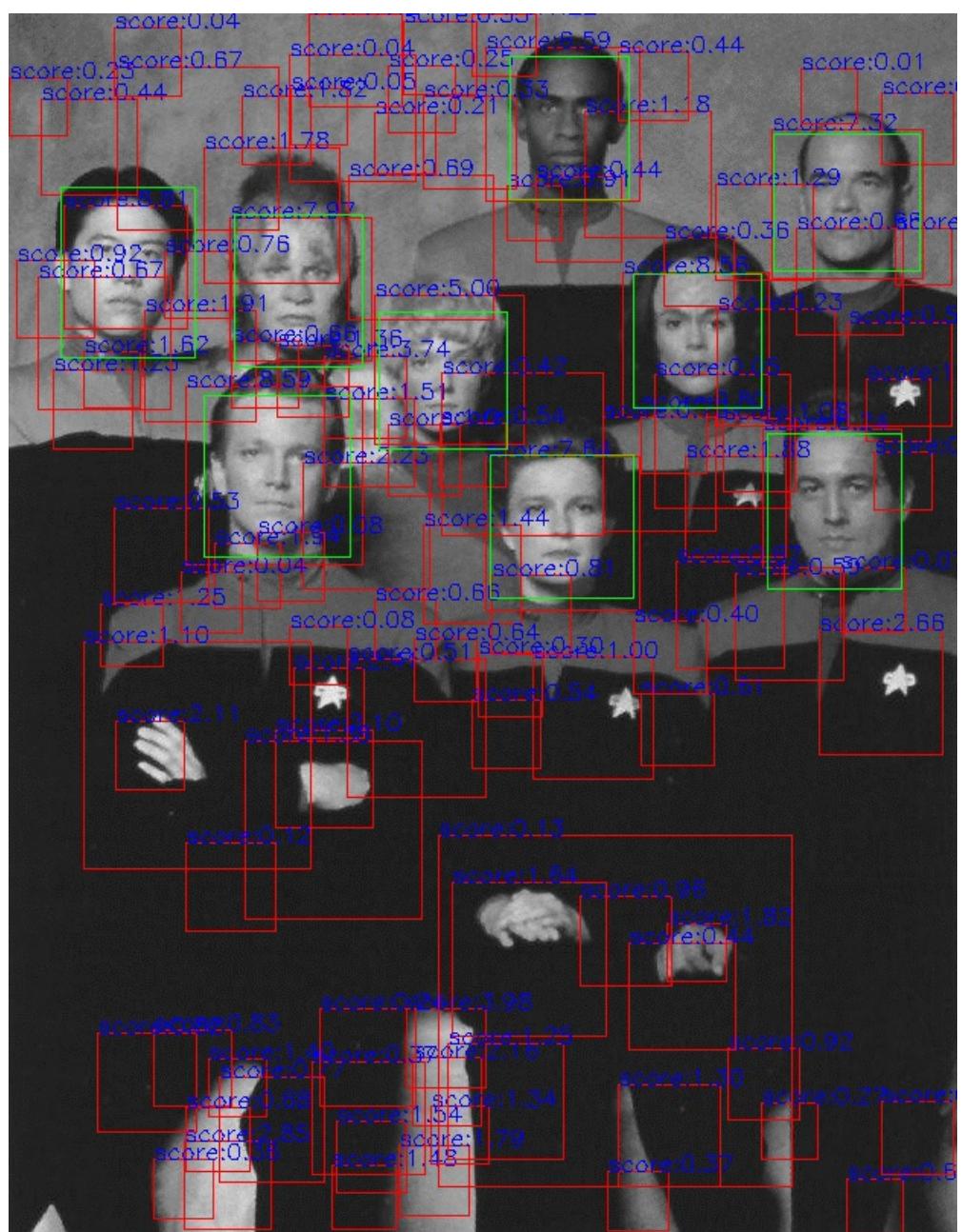
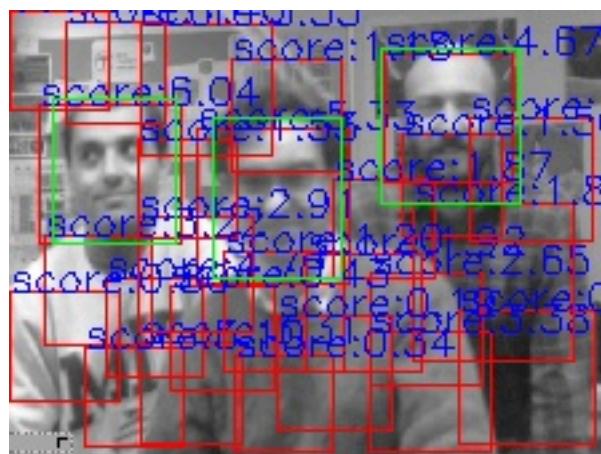


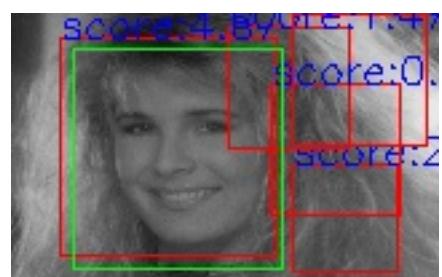


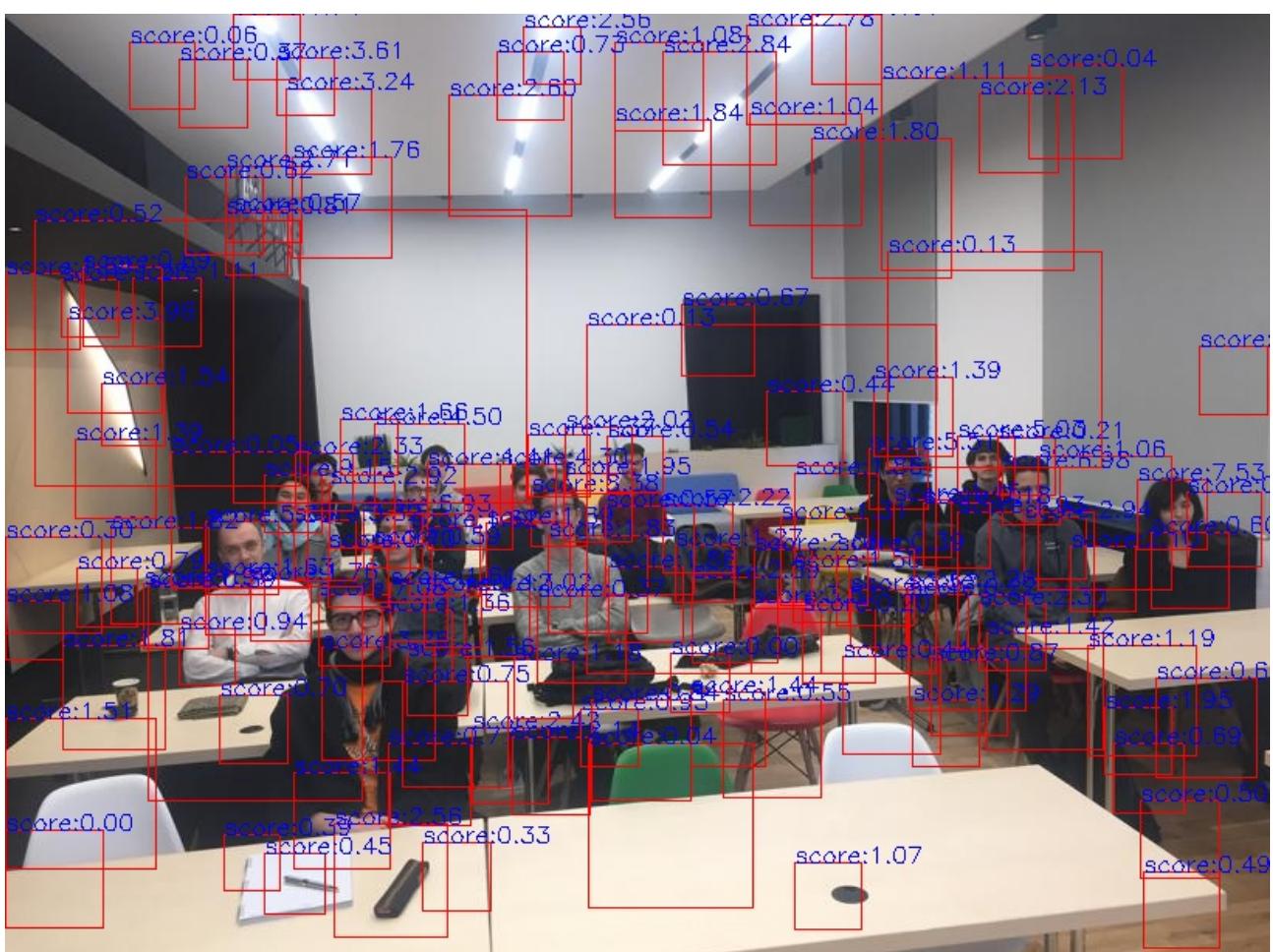
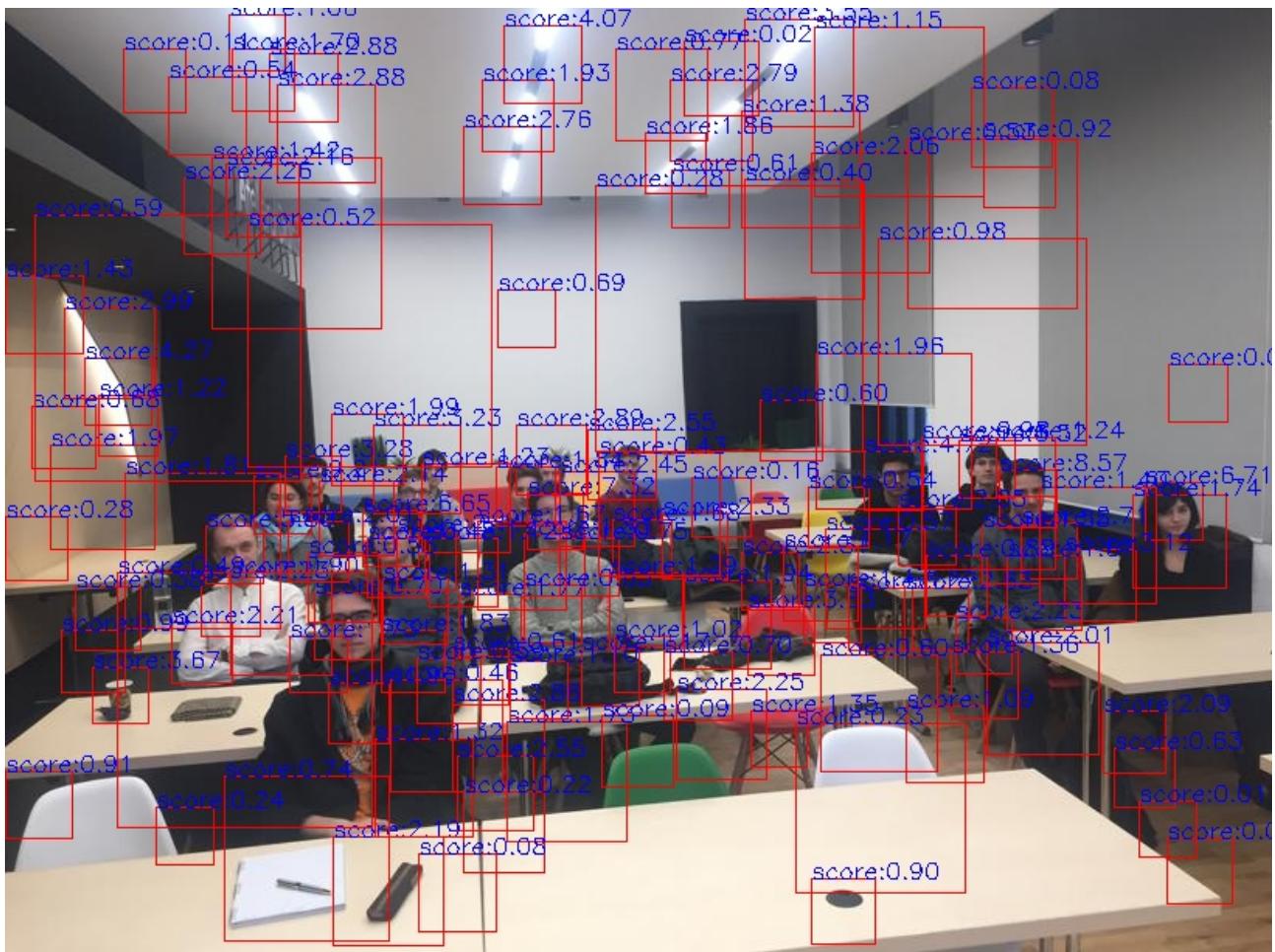


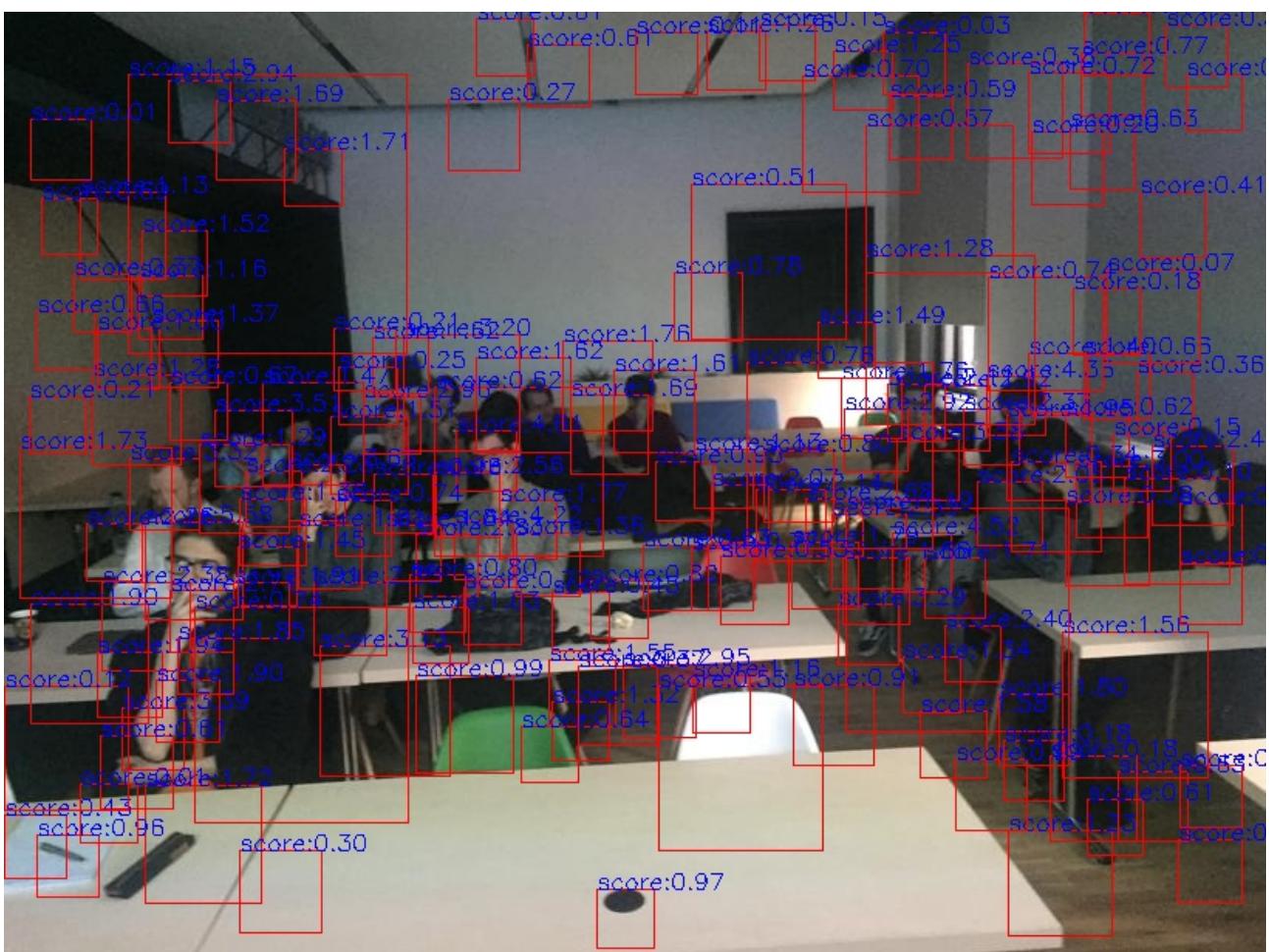
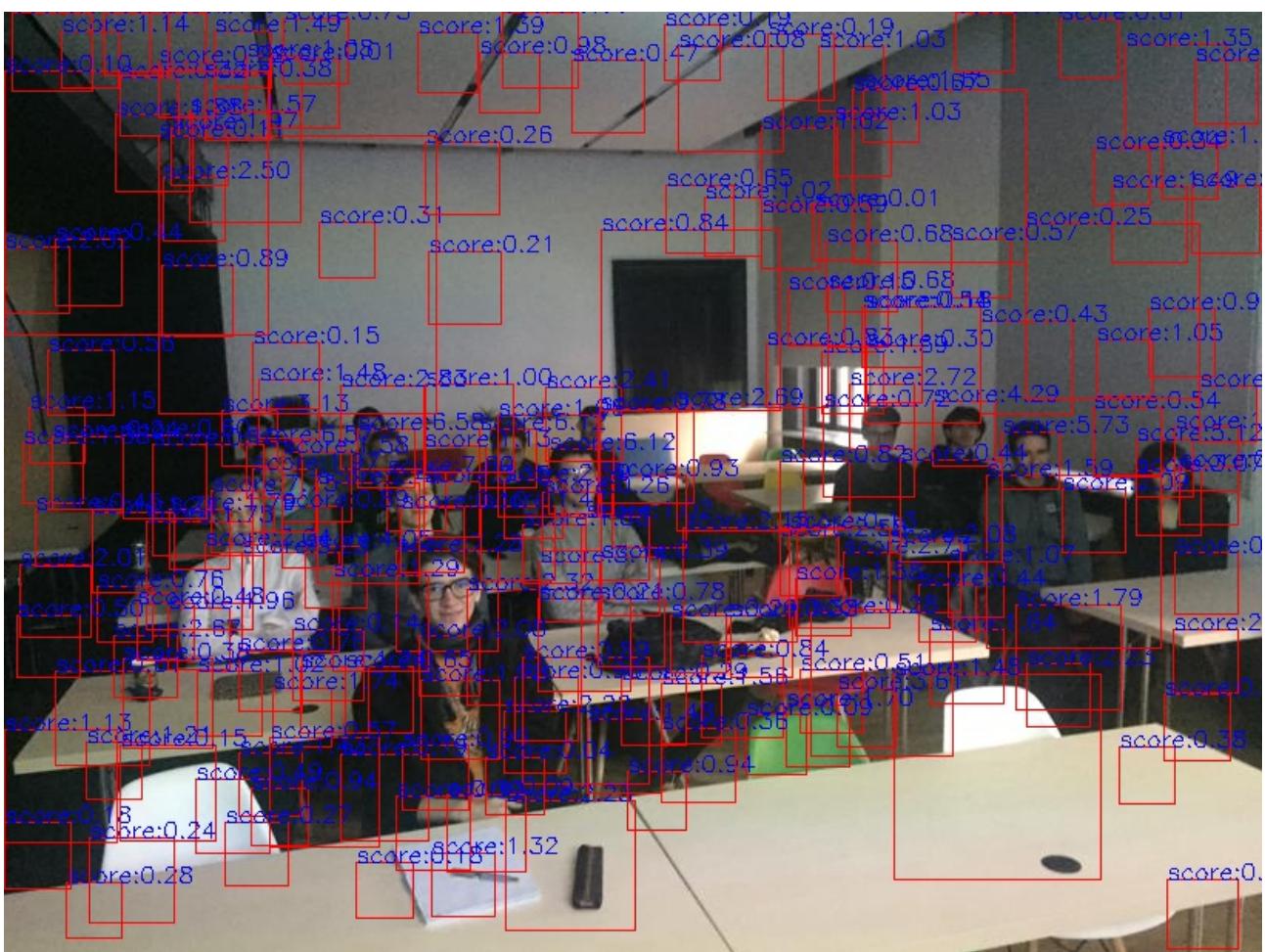
4. Dim_hog_window = 4, Scales = 100, Threshold = 0











5. Dim_hog_window = 4, Scales = 200, Threshold = 0 (cel mai bun rezultat)

